

Zetasinter : Facility Guide



The set-up instructions and safety regulations must be followed, otherwise the furnace will be deemed to have been used improperly, effectively cancelling any claims against Nanoe.

1. Shipping and unloading



Suspended loads are dangerous. Working beneath a suspended load is prohibited. There is a risk of fatal injury. Safety and accident prevention guidelines applicable for forklift, stacker and work bench must be followed.

- A standard pallet truck or forklift (forks width 685 mm) is recommended to unload the crate.
- Pay attention to doors width for delivery (1300 mm minimum).
- An area of at least 3000x2000x2500 (LxWxH) mm is recommended to uncrate the furnace.

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|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Crate dimension (LxWxH) | 1200x1000x940 mm |
| Crate weight | ≈200 kg |
| Contents of the crate | <ul style="list-style-type: none"> o A Zetasinter furnace o A specific box with an alumina tube o Another box with spare parts |

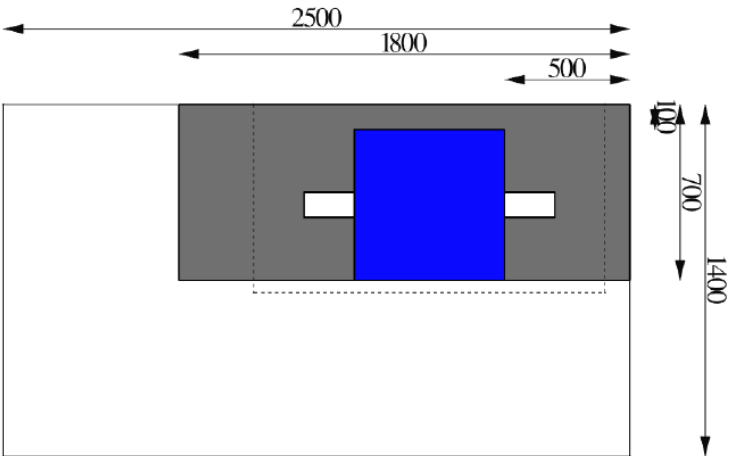
2. Moving and operating space

- The furnace has four wheels with brakes, however the using of a stacker is recommended to lift and lift down the furnace from the crate to the operating space.


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| Furnance dimension (LxWxH) | 600x600x770 mm (without tube) |
| Weight | 112 kg |
| Stacker Recommended |  <p>Capacity : 250 kg Fork length : 800 mm Fork Width : 300 mm</p> |

- Zetasinter Operating area (mm) :

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- For comfortable using experience it is recommended to install the Zetasinter furnace :
 - o in a 2500x1400 mm operating space
 - o on a work bench
 - o under an venting hood (cf. Environmental requirement)

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|-------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Operating space surface (LxW) | 2500 x 1400 mm | |
| Operating space Height (H) | 2000 mm without working bench 2500 mm min. with working bench | |
| Work bench recommended |  | Material : Not flammable (stainless steel) Capacity : 500 kg LxWxH : 1800x800(700) mm |

3. Environmental requirement





Note :

This product does **not** comply with the ATEX Directive and may **not** be used in ignitable atmospheres.


- Laboratory/Factory environment without dust is recommended :

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| Room Temperature | 5-35°C |
| Humidity | <70% (non-condensing) |

- During thermal treatment the Zetasinter furnace released heat.
- The working area must be ventilated with a non-recycling venting system of 500 m³/h (300 CFM).

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|--------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Laboratory hood recommended for laboratory environment |  | Size : 1730x800x1430 mm With controller Max flow : 2000 m ³ /h |
| Canopy hood recommended for factory environment |  | Size : 1400x700mm With controller Max flow : 1400 m ³ /h |

4. Electrical supply






This product does **not** have IP rate electrical plug. The connection to a 200-240V electric power supply is dangerous.

- Electric connection must be carried out by qualified personnel.
- The equipment must be connected to a safe and reliable power supply according to local norms.

- The power supply must be reliable :

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| Power supply | Single-phase with Earth (ground) |
| | 200-240V~ 50-60Hz Phase-Neutral (or Live-Live) |

- The circuit from power supply to furnace must be a dedicated branch circuit :

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| Circuit breaker | 32A |
| Power cable | 3G (3 Core) >4 mm² (<11 AWG) Range – According to cable length |
| Power Connection | <div>32A SP+N switch fuse-disconnector</div> <div></div> <div>Or</div> <div>32A 3 Pole non fused isolator switch</div> <div></div> <div>Or</div> <div>32A 2P+E power plug and socket</div> <div></div> |

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- The electric connection must be carried out by qualified personnel :

| Connection Details | | Supply cables | |
|--------------------|-----------------------|---------------------------|-----------------------|
| | | Phase-Neutral 200-240V | Live-Live 200-240V |
| | Furnace cables colour | | |
| | Brown | P | L1 |
| | Blue | N | L2 |
| | Green/ Yellow | E (ground) | |

5. Gas supply (for steel filaments only)



Working at a positive relative pressure is not recommended for this product. Gas supply relative pressure must not exceed 0.2 bar and the flanges must be well fitted.




Inert gas such as Argon are dangerous due to the asphyxiation hazard. The working area must be ventilated with an adequate venting system. Using of an oxygen gas monitor is recommended.



Note :
This product does **not** comply with the ATEX Directive and may **not** be used with flammable gases.

- Sintering parts are sintered under reducing atmosphere using a mix Argon-Hydrogen gas with 3.0% maximum of hydrogen gaz.
- A minimum gas capacity of minimum 2,5 m³(stp) is necessary to perform a sintering cycle.
- Supply gaz relative pressure must be set at 0.2 bar.

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|-------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gas specification | Ar + H ₂ 2,9 %max | |
| Cylinder requirement | 200 bar /50L/10.5 m ³ | |
| Pressure reducer for connection to a 200 bar cylinder |  | <p>Double stage</p> <p>Inlet max pressure : 200 bar</p> <p>Outlet pressure : 0.05-1.00 bar</p> <p>Inlet fitting : Contact local gaz cylinder supplier.</p> <p>Outlet fitting : OD 6 mm</p> |

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